NOTES ON THE LIFE HISTORY OF *DANAUS GENUTIA ALEXIS* (WATERHOUSE AND LYELL) (LEPIDOPTERA: NYMPHALIDAE: DANAINAE)

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Abstract

Notes are given on the life history of *Danaus genutia alexis* (Waterhouse and Lyell) and the larval food plant identified.

Introduction

The orange tiger, *Danaus genutia alexis* is distributed through north-western Australia to the Northern Territory (Common and Waterhouse 1981). It is the Australian subspecies of a butterfly found as far west as India. No host plant or life history details have been recorded for the Australian subspecies.

During visits to Kununurra, Western Australia in December 1993 and April 1995, females were observed ovipositing on an asclepiad vine which grows prevalently throughout the Ord River District. Larvae were collected and successfully reared on cuttings of the vine.

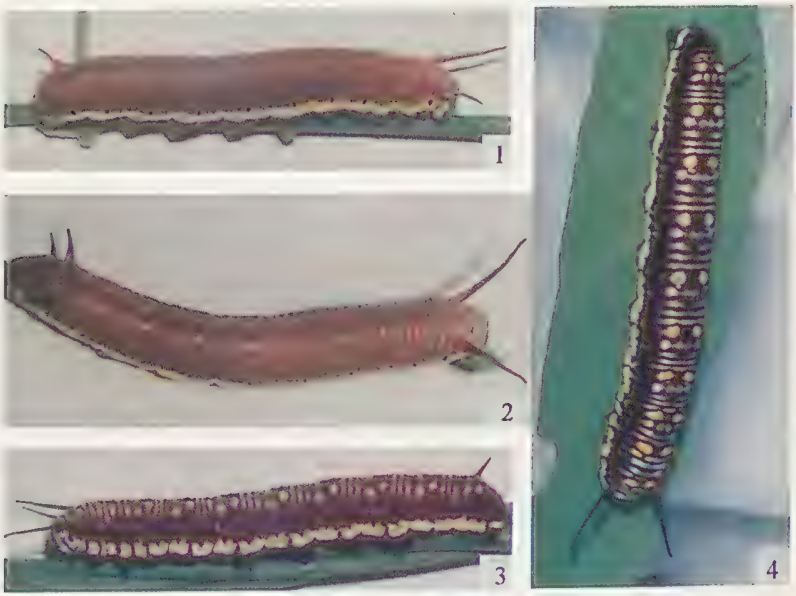
Life History

Food Plant. The host plant was identified as *Sarcostemma esculentum* (L.f.) Holm (Family Asclepiadaceae) (Wheeler 1992), a twining perennial vine, leaves shortly petiolate, linear, 37-76 x 3-6.5 mm with pink flowers. The host plant is found in damp habitats and is usually found associated with bulrushes to which it clings for support.

Egg. Cream, taller than it is wide with approximate dimensions of 0.4 x 0.6-0.8 mm, ribbed and flat on apex. The eggs are laid singly on the underside of the mature new growth and on the stems of the host plant. No eggs were noticed on the immature new growth of the host plant. The egg shape is closest in resemblance to that shown in Ackery and Vane-Wright (1984, plate I, fig. 3).

First Instar Larva. Condensed patterning gives larvae a greyish white appearance. On closer examination larval patterning of yellow and white dorsal spotting over a dark brown body colouring can be seen. The majority of larvae examined showed evidence of three pairs of tubercles developing on segments 2, 5 and 11. The tubercles on segment five were the smallest and in several cases were not evident.

Final Instar Larva (Figs 1-4). Larvae collected had extremely variable body colouring and markings, ranging from beige (pale form) to black (dark form). The two most common colours encountered were beige and maroon. Larvae had two or three tubercle pairs on segments 2, 5 and 11, with segment 5 having the smallest pair varying in size from apparently absent to approximately 1.5 mm in length. In some cases the tubercles on segment 5



Figs. 1-4. Final instar larvae of *Danaus genutia alexis*: (1, 2) pale form; (3, 4) dark form.

were small pinkish red dimples. Larvae reached 27-33 mm in length and, just prior to pupation, turned pale green with a conspicuous cream dorsal band on segment 6 where the pupa has a gold-spotted band.

Pale Form (Figs 1, 2): Beige, segments 2-11 with two dorsal yellow spots separated by paler transverse bands, an interrupted cream sub-spiracular band with two yellow spots corresponding to each segment. Tubercles dark brown at tips and pink towards base. Head brown with white markings.

Dark Form (Figs 3, 4): Maroon to black with successive dorsal bands of three white spots, followed by two yellow spots, separated by three narrow white bands on segments 2-11. The central white spot is divided and less conspicuous and there is an interrupted cream sub-spiracular band with two yellow spots corresponding to each segment. Tubercles black at the tips and pinkish red at the base. Head black with white markings.

Pupa. Green or pink with two gold spots on the thorax and eyes; a faint black dorsal line and a raised gold spotted dorsal band on segment 6; approximately 15 mm in length and 8 mm in diameter; similar to that of *Danaus chrysippus petilia* (Stöll) in colouring and shape but the abdomen is stouter and the black dorsal band is greatly reduced.

Discussion

One larva took nine days from hatching to pupation and from the pupae reared, adults took 6-9 days to emerge. Larvae of *D. chrysippus petilia* and *Euploea core corinna* (W.S. Macleay) were also found on the same food plant and successfully reared to adults. Larvae of *D. genutia alexis* orientated themselves head down on the leaves of the food plant, eating it from the tip to the base of the petiole before moving onto another leaf.

The majority of first instar larvae had three pairs of tubercles, with the third and smallest pair on segment 5, often disappearing during the later instars, occasionally persisting to the final instar. All larvae reared in captivity from egg or early instar took on the dark form.

Pupation occurred on the stems of the host plant or on the bulrushes adjacent to it. Adults fed at flowers early in the morning before retreating to the cooler environs of the swamp during the heat of the day. During both visits, adults and the host plant were plentiful, with the host plant totally covering the tops of trees within the swamp in December 1993.

In recent times adults have been collected in the Northern Territory at Oolloo Crossing on the Daly River (14°04'S, 131°15'E) and at Fog Bay (12°49'S, 130°22'E). Adults use the Daly River as a flight path and have been taken feeding at flowers on the river bank during the dry season. At the Fog Bay site adults were caught flying through mangrove swamps behind coastal sand dunes. At both locations adults were scarce, suggesting that breeding may not be taking place nearby. Northern Territory Herbarium records show that the food plant is known to occur on the Peron Islands (at the mouth of the Daly River) and the Milingimbi Flood Plain. Further exploration of the Daly River environs may establish breeding grounds for *D. genutia alexis* on this plant.

Acknowledgments

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References

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